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TITLE: Case Library for Standardization and Testing of a Breast
        MRI Lexicon

PRINCIPAL INVESTIGATOR: Nola M. Hylton, Ph.D.

CONTRACTING ORGANIZATION: University of California at San Francisco
                           San Francisco, California 94143-0962

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Nola M. Hylton, Ph.D.

7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES)

University of California at San Francisco
San Francisco, California 94143-0962

E-Mail: nola.Hylton@radiology.ucsf.edu

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13. Abstract (Maximum 200 Words) (abstract should contain no proprietary or confidential information)
The goal of this project was to develop an image database to include the spectrum of findings encountered on breast MR images, along with pertinent clinical history and histopathologic findings. The purpose of the image library was to support the standardization and testing of a breast MRI lexicon, originally developed as part of the International Working Groups on Breast MRI, funded by the DHHS Office on Women's Health. Subsequent support for further refinement of the lexicon was provided by the Susan G. Komen Breast Cancer Foundation and the American College of Radiology. A library of 121 representative breast MRI cases were collected and included representative examples of each of the 26 possible combinations of findings for lesion type, shape/margin and internal enhancement patterns that comprise the current breast MRI lexicon. Groups were asked to provide cases demonstrating specific feature combinations and were also asked to provide relevant associated clinicalinformation and histopathologic outcome. Breast MR images were formatted with case histories and pathologic diagnosis and compiled into a library that was subsequently used in multi-reader studies. The formatted cases will be used to illustrate the ACR BI-RADS® MRI Lexicon™, which is currently in preparation.

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Project Period May 14, 2001 – May 13, 2002

Principal Investigator: Nola Hylton, Ph.D., University of California, San Francisco

Grant Title: <u>Case Library for Standardization and Testing of a Breast MRI Lexicon</u>

INTRODUCTION

The goal of this project was to compile a database of breast MR images representing the spectrum of benign and malignant disease findings along with pertinent clinical history and histopathologic data. The purpose of the library was to support the development and testing of a breast MRI lexicon developed by the DHHS and Office on Women's Health International Working Group on Breast MRI, with support from the Susan G. Komen Breast Cancer Foundation and the American College of Radiology (ACR).

BODY

During this 1-year effort, a library of 121 representative breast MRI cases were collected and included representative examples of each of the 26 possible combinations of findings for lesion type, shape/margin and internal enhancement patterns that comprised the current breast MRI lexicon. Cases were solicited from high volume breast MRI sites, including the groups participating in the NCI-sponsored International Breast MRI Consortium and the International Working Group in Breast MRI. Groups were asked to provide cases demonstrating specific feature combinations and were also asked to provide relevant associated information including patient age, reason for referral, clinical history, results of diagnostic procedures and histopathologic outcome. Cases were requested with all patient-identifying information removed; the study was conducted under an IRB exemption at UCSF. Breast MR images were formatted with case histories and pathologic diagnosis and compiled into a library that was subsequently used in multi-reader studies. The formatted cases will be used to illustrate the ACR BI-RADS® MRI Lexicon™, which is currently in preparation.

Key Accomplishments

- Collection of 121 case examples from 11 institutions in the US and Europe
- Formatting and compilation of case examples with descriptive text
- Completed illustrated cases for the ACR BI-RADS® MRI Lexicon™

Reportable Outcomes:

The PI is a Co-Chair along with Dr. Debra Ikeda at Stanford University, of the ACR Breast MRI Lexicon Committee. An illustrated publication of the ACR BI-RADS® MRI Lexicon™, containing

images extracted from the case library, has been submitted to the American College of Radiology and is currently being prepared for publication.

Conclusions

The goal of collecting and compiling a library of breast MR images was successfully accomplished, providing a comprehensive database for the purpose of testing and refining the terminology of a breast MRI lexicon. The ACR BI-RADS® MRI Lexicon™ is expected to be widely disseminated as the standard for breast MR image interpretation and reporting, analogous to the mammographic BI-RADS®.

Bibliography

Ikeda DM, Hylton NM, Kuhl CK, Weinreb JC, Morris EM, Kinkel K, Hochman MG, Kaiser WA, Lewin J, Degani H, Viehweg P, Schnall MD. ACR-Breast Imaging and Reporting System-Magnetic Resonance Imaging. (ACR, in preparation)

Presentation

Meeting of the International Working Group on Breast MRI
Lesion Diagnosis Working Group
April 18-20, 2002
Dallas, Texas

Personnel receiving pay

Catherine Klifa, Ph.D., Co-Investigator, Department of Radiology, UCSF